Bioassays of

Gottlieb's Financial Services
Wastewater Treatment Plant

Jacksonville, Duval County, Florida

NPDES #FL0043087

Sampled 9/18/95

December 1995

Biology Section
Division of Administrative and Technical Services

Comprehensive Quality Assurance Plan #870346G

Bioassays of

Gottlieb's Financial Services Wastewater Treatment Plant

Jacksonville, Duval County, Florida

NPDES #FL0043087

Biology Section
Bureau of Laboratories
December 1995

Introduction

Gottlieb's Financial Services WWTP, Jacksonville, Duval County, Florida, NPDES #FL0043087, tests performed on 19 to 21 September, 1995.

This wastewater treatment plant is located at 6400 Atlantic Boulevard, Jacksonville. The facility has a design flow of 0.008 MGD and provides secondary treatment through the extended-aeration process. Treatment includes chlorination and dechlorination prior to discharge of the effluent via a drainage ditch to the receiving waters of Pottsburg Creek which flows into the St. Johns River (facility summary provided by Ha Nguyen, FDEP, Jacksonville).

The toxicity tests discussed in this report were performed in accordance with methods described by Weber, 1993, *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, 4th Edition, EPA/600/4-90/027F.

Results and Discussion

The FDEP Biology Section performed two 48-hour static acute screening toxicity bioassays on a sample of effluent from this facility. The test species used for these bioassays were the water flea, *Ceriodaphnia dubia*, and the bannerfin shiner, *Cyprinella leedsi*. The test results did not indicate toxicity (Table 1).

Total residual chlorine of the sample was 0.02 mg/L in the field but was not detected in the laboratory. Total and unionized ammonia concentrations were 1.56 mg/L and 0.02 mg/L, respectively. Further chemical analyses were performed on the sample and several metals were identified (Table 2).

Conclusion

The sample of effluent collected from this facility on September 18, 1995, did not show toxicity.

Table 1. Data recorded during the 48-hour acute screening bioassays of a sample of effluent from the Gottlieb's Financial Services WWTP, Jacksonville, Duval County, Florida, NPDES# FL0043087, performed on 19 to 21 September,1995.

Facility: **Gottlieb's Financial Services WWTP** — NPDES # **FL0043087** — Facility Type: **Wastewater Treatment Plant**
Location: 6400 Atlantic Blvd., Jacksonville — Contact/District: Tim McKelvey/Northeast
County: Duval — Test type: static acute screen
Sample Collection Date: **9/18/95** Time: 1430 — # tests: 2 — Receiving Water: Pottsburg Creek
Test Beginning Date: 9/19/95 Time: 1400 — Chlorination Type: Sample collected after dechlorination
Test Ending Date: 9/21/95 Time: 1400 — **Page 1 of 1**

Total Residual CL2	mg/L	Method
Field:	0.02	-
Lab:	<0.03	DR-100

Ammonia	Total (mg/L)	Unionized (mg/L)
Control Water (fish):	< 0.017	0.00
20% Dilute Mineral Water (cladocerans):	< 0.017	0.00
100% Sample:	1.56	0.02

Alk & Hardness	Alkalinity (mg/L)	Hardness (mg/L)
Control Water (fish):	125	120
20% Dilute Mineral Water (cladocerans):	70	80
100% Sample:	55	320

Salinity	(ppt)
Control Water:	0
100% Sample:	0

Organism: ***Ceriodaphnia dubia*** Life stage: < 24 hours old

	Sample/Diluent	SURVIVAL # Alive			pH			Temperature[A]			Dissolved Oxygen			Conductivity Uncorrected µmhos/cm	
Concentrations	Volume(mL)	0 hr	24 hr	48 hr	0 hour	24 hour	48 hour	0 hour	24 hour	48 hour	0 hour	24 hour	48 hour	0 hour	48 hour
Control A	0/20	5	5	5	8.3	-	8.3	23.7	-	23.4	8.1	-	8.4	180	210
Control B	0/20	5	5	5	-	-	8.3	-	-	23.2	-	-	8.4	-	210
Control C	0/20	5	5	5	-	-	8.3	-	-	23.0	-	-	8.4	-	210
Control D	0/20	5	5	5	-	-	8.3	-	-	22.9	-	-	8.3	-	205
100% A	20/0	5	5	5	7.4	-	8.1	23.8	-	23.3	8.3	-	8.5	875	950
100% B	20/0	5	5	5	-	-	8.1	-	-	23.3	-	-	8.4	-	940
100% C	20/0	5	5	5	-	-	8.1	-	-	23.1	-	-	8.3	-	910
100% D	20/0	5	5	5	-	-	8.1	-	-	22.7	-	-	8.2	-	890

[A] Temperature of test incubator was continously recorded on a strip chart recorder.
Incubator temperature range for the test period was 24.2-24.4 °C .

Organism: ***Cyprinella leedsi*** Age: 11 days

	Sample/Diluent	SURVIVAL # Alive			pH			Temperature[B]			Dissolved Oxygen			Conductivity Uncorrected µmhos/cm	
Concentrations	Volume(mL)	0 hr	24 hr	48 hr	0 hour	24 hour	48 hour	0 hour	24 hour	48 hour	0 hour	24 hour	48 hour	0 hour	48 hour
Control A	0/500	5	5	5	7.9	8.2	8.6	24.1	23.5	23.3	8.1	8.4	8.3	245	280
Control B	0/500	5	5	5	7.9	8.2	8.6	24.1	23.4	23.2	8.0	8.4	8.3	245	250
Control C	0/500	5	5	5	7.9	8.2	8.5	24.1	23.3	23.2	8.1	8.5	8.3	245	250
Control D	0/500	5	5	5	7.9	8.2	8.5	24.0	23.5	23.4	8.1	8.5	8.4	245	260
100% A	500/0	5	5	5	7.2	7.7	7.9	23.9	23.6	23.4	7.5	8.3	8.4	905	915
100% B	500/0	5	5	5	7.2	7.7	7.9	23.8	23.5	23.4	7.5	8.2	8.4	905	920
100% C	500/0	5	5	5	7.2	7.6	7.9	23.8	23.5	23.4	7.5	8.3	8.3	905	910
100% D	500/0	5	5	5	7.2	7.6	7.9	23.8	23.7	23.6	7.5	8.1	8.4	905	915

[B] Temperature of test room was continously recorded on a strip chart recorder.
Room temperature range for the test period was 23-24 °C.

Table 2. Results of chemical analyses on the effluent from the Gottlieb's Financial Services Wastewater Treatment Plant sampled on September 18, 1995.

Metals

Calcium	77.5 mg/L[A]
Copper	18 µg/L
Iron	35 µg/L
Magnesium	27.6 mg/L[A]
Zinc	65 µg/L

Pesticides and Herbicides

none detected

Base, Neutral, & Acid Extractable Organics

none detected

[A] Value reported is the mean of two or more determinations.

FDEP Biology Section — Acute Bioassay Bench Sheet

Sample Source: Gottlieb's Q. | Sample Collection: Date 9-18-95 Time 1430
County: Duval | Test Beginning: Date 9/19/95 Time 1400
Contact / District: Tim McKelvey / NE | Test Ending: Date 9-21-95 Time 1400
NPDES Permit #: FL00 - 057 | Organism Batch #: 44 Diluent Batch #: 39
LIMS Sample #: 117078 LIMS Job #: 95-SEP-19-09 | Organism Age: < 24 hours
sample 1 9/22 | *Test Organism:* Ceriodaphnia dubia

Test Type: ~~Screening~~ | Definitive
~~Static~~ | Static Renewal | Flow-through

Test Number: 1 of 1

Remarks:

Instrument Calibrations:

	pH	Temperature °C	D.O. mg/L	Conductivity µmhos/cm
meter #	7851	90H018262	90H018262	G9005749
0 hr	7.0 @ 7.0 9.0 @ 9.0	23.7 @ 23.8	8.3 @ 24.5 °C	169.0 @ 102.3 1356 @ 1412 @ 24.1 °C
24 hr	7.0 @ 7.0 9.0 @ 9.0	23.2 @ 23.2	8.4 @ 24.1 °C	110.4 @ 102.3 1353 @ 1412 @ 24.1 °C
48 hr	7.0 @ 7.0 9.0 @ 9.0	23.2 @ 23.2	8.4 @ 24.2 °C	107.8 @ 102.3 984 @ 1013 @ 23.9 °C 9960 @ 10320

Conc.	Chamber #	Number Live 0 hr	Number Live 24 h	Number Live 48 h	pH 0 hr	pH 24 h	pH 48 h	Temperature (°C) 0 hr	Temperature (°C) 24 h	Temperature (°C) 48 h	D.O. (mg/L) 0 hr	D.O. (mg/L) 24 h (48 h)	D.O. (mg/L) 48 h	UNCORRECTED Cond. (mmhos/cm) Cond. (µmhos/cm) 0 hr	UNCORRECTED Cond. (mmhos/cm) Cond. (µmhos/cm) 24 h	UNCORRECTED Cond. (mmhos/cm) Cond. (µmhos/cm) 48 h
Control	A	5	5	5	8.3		8.3	23.7		23.4	8.1	8.4	8.0	180		210
Control	B	5	5	5			8.3			23.2		8.4	8.3			210
Control	C	5	5	5			8.3			23.0		8.4	8.3			210
Control	D	5	5	5			8.3			22.9		8.3	8.3			205
100%	A	5	5	5	7.4		8.1	23.8		23.3	8.3	8.5	8.4	875		950
100%	B	5	5	5			8.1			23.3		8.4	8.3			940
100%	C	5	5	5			8.1			23.1		8.3	8.3			910
100%	D	5	5	5			8.1			22.7		8.2	8.3			890
Measured/Loaded by:		MF	MF	MF	MF		JN	MF		JN	MF		JN	MF		JN
Recorded by:		MF	MF	MF	JN		LM	JN		LM	JN		*LM	JN		LM

Investigators' Signatures

Jennifer Morris
Tina Mikulski
Marshall Faircloth
Mary Monaf

reviewer

form updated 5/05/95

Water Quality Parameters	Salt Water / Well Water / 20% Min Water	Sample	Method	Measured by
Field Total Residual Cl2 (mg/L):		0.02	—	Tim McKelvey on meter
Lab Total Residual Cl2 (mg/L):	—	<0.03	DR-100 ⇔ <0.03	LM
Alkalinity (mg/L as $CaCO_3$):	—	70	Hach ⇔ 55	LM
Hardness (mg/L as $CaCO_3$):	—	80	Hach ⇔ 320	LM
Total ammonia (mg/L as N):	—	<0.017	1.56 mg/L Orion	JN

*D.O.'s changed because salinity wasn't adjusted in time.

Ammonia Meter #98136 Meter Slope: -57.3 Ammonia Blank: <0.017 Control Salinity: 0 ppt Sample Salinity: 0 ppt

FDEP Biology Section — Acute Bioassay Bench Sheet

Sample Source: Gottlieb #2
County: Duval
Contact / District: Tim McKelvey / NE
NPDES Permit #: FL0043087
LIMS Sample #: 117078 LIMS Job #: 95-SEP-19-09
Samples log 9/22

Sample Collection: Date 9-18-95 Time 1430
Test Beginning: Date 9/19/95 Time 1500
Test Ending: Date 9-21-95 Time 1500
Organism Batch #: 43 Diluent Batch #: Well/H2O
Organism Age: 11 days
Test Organism: Cyprinella leedsi

Test Type: (Screening) | Definitive
(Static) | Static Renewal | Flow-through

Test Number: 1 of 2

Remarks:

Instrument Calibrations:	pH	Temperature °C	D.O. mg/L	Conductivity µmhos/cm
meter #	7851	90H018262	90H018262	G9005749
0 hr	7.0 @ 7.0 9.0 @ 9.0	23.7 @ 23.8	8.3 @ 24.5 °C	1090 @ 1023 1386 @ 1412 @ 24.1 °C
24 hr	7.0 @ 7.0 9.0 @ 9.0	23.2 @ 23.2	8.4 @ 24.1 °C	1104 @ 1023 1380 @ 1412 @ 24.1 °C
48 hr	7.0 @ 7.0 9.0 @ 9.0	23.2 @ 23.2	8.4 @ 24.2 °C	1078 @ 1023 984 @ 1013 @ 23.9 °C 990 @ 1032

		Number Live			pH			Temperature (°C)			D.O. (mg/L)			UNCORRECTED Cond. (mmhos/cm) Cond. (µmhos/cm)		
Conc.	Chamber #	0 hr	24 h	48 h	0 hr	24 h	48 h	0 hr	24 h	48 h	0 hr	24 h	48 h	0 hr	24 h	48 h
Control A	(22) A	5	5	5	7.9	8.1	8.6	24.1	23.5	23.3	8.1	8.4	8.3	245	255	280
Control B	(24) B	5	5	5	7.9	8.1	8.6	24.1	23.4	23.2	8.0	8.4	8.3	245	250	250
Control C	(38) C	5	5	5	7.9	8.1	8.5	24.1	23.3	23.2	8.1	8.5	8.3	245	250	250
Control D	(67) D	5	5	5	7.9	8.1	8.4	24.0	23.5	23.4	8.1	8.5	8.4	245	255	260
100%	(350) A	5	5	5	7.2	7.7	7.9	23.4	23.6	23.4	~~7.1~~ *	8.3	8.4	905	910	915
100%	(82) B	5	5	5	7.2	7.7	7.9	23.8	23.5	23.4	~~7.8~~ *	8.2	8.4	905	910	920
100%	(503) C	5	5	5	7.2	7.6	7.9	23.8	23.5	23.4	7.5	8.3	8.3	905	905	910
100%	(3) D	5	5	5	7.1	7.6	7.9	23.8	23.7	23.6	7.5	8.1	8.4	905	910	915
											*					
											7.5	calibrated				
											7.5	9/19/95 JN				
Measured/Loaded by:		MF	MF	MF	TM	MF	JN	TM	MF	JN	TM	MF	JN	TM	MF	JN
Recorded by:		MF	MF	MF	JN	JN	LM	JN	JN	LM	JN	JN	LM	JN	JN	LM

Investigators' Signatures

Joseph Morris
Mary Meadows
Marshall Hamblen
Tim McKelvey

reviewer

form updated 5/05/95

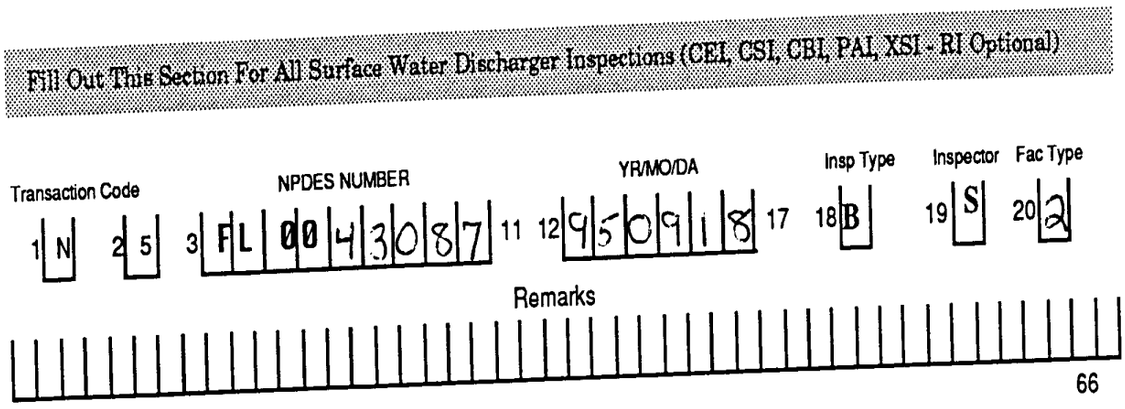
Salt Water
(Well Water) 20% Min Water

Water Quality Parameters

		Sample	Method	Measured by
Field Total Residual Cl2 (mg/L):		0.02	—	Tim McKelvey
Lab Total Residual Cl2 (mg/L):	<0.03	<0.03	DR-IIC	TM
Alkalinity (mg/L as $CaCO_3$):	125	55	Hach	LM
Hardness (mg/L as $CaCO_3$):	170	320	Hach	LM
Total ammonia (mg/L as N)	<0.017	1.56	Orion	JN

Ammonia Meter #98136 Ammonia Meter Slope: -57.3 Ammonia Blank: <0.017 Control Salinity: 0 ppt Sample Salinity: 0 ppt

The Bioassay of the Gottlieb's Financial Services WWTP effluent sampled on September 18, 1995, NPDES #FL0043087.



The Priority Pollutants Analysis for the Bioassay of the Gottlieb's Financial Services WWTP effluent sampled on September 18, 1995, NPDES #FL0043087.

